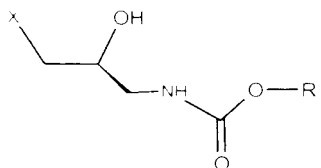


**WHAT IS CLAIMED IS:**

1. A (S)-secondary alcohol having a general structural formula:

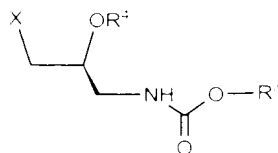


5

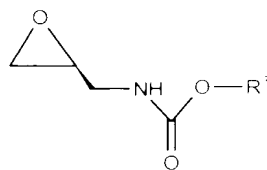
wherein R<sup>3</sup> is C<sub>1</sub>-C<sub>10</sub> alkyl, and X is halogen, alkylsulfonyl, or arylsulfonyl, or a salt or hydrate thereof.

2. The (S)-secondary alcohol of claim 1 wherein R<sup>3</sup> is C<sub>4</sub>-C<sub>7</sub>  
10 tertiary alkyl.
3. The (S)-secondary alcohol of claim 2 wherein R<sup>3</sup> is tertiary  
butyl.
4. The (S)-secondary alcohol of claim 1 wherein X is Cl.  
15
5. The (S)-secondary alcohol of claim 1 having a name tert-butyl  
(2S)-3-chloro-2-hydroxypropylcarbamate.
6. The (S)-secondary alcohol of claim 1 in crystalline form.  
20

7. An (S)-ester having a general structural formula:



- 5                      wherein R<sup>3</sup> is C<sub>1</sub>-C<sub>10</sub> alkyl, R<sup>4</sup> is C<sub>1</sub>-C<sub>5</sub> alkylcarbonyl, and X is  
                         halogen, alkylsulfonyl, or arylsulfonyl, or a salt or hydrate thereof.
8.            The (S)-ester of claim 7 where R<sup>3</sup> is C<sub>4</sub>-C<sub>7</sub> tertiary alkyl.
- 10            9.            The (S)-ester of claim 8 where R<sup>3</sup> is tertiary butyl.
10.          The (S)-ester of claim 7 where X is Cl.
11.          The (S)-ester of claim 7 having a name (1S)-2-[(tert-  
15        butoxycarbonyl)amino]-1-(chloromethyl)ethyl acetate.
12.          The (S)-ester of claim 7 in crystalline form.
13.          An (S)-epoxide having a general structural formula:



20

wherein  $R^3$  is  $C_1$ - $C_{10}$  alkyl, or a salt or hydrate thereof, in crystalline form.

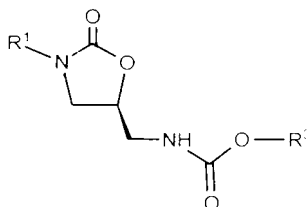
5 14. The (S)-epoxide of claim 13 wherein  $R^3$  is  $C_4$ - $C_7$  tertiary alkyl

15. The (S)-epoxide of claim 14 wherein  $R^3$  is tertiary butyl.

16. The (S)-epoxide of claim 13 having a name tert-butyl (2S)-oxiranylmethylcarbamate.

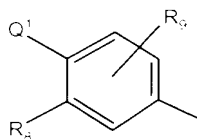
10

17. An (S)-intermediate having a general structural formula:



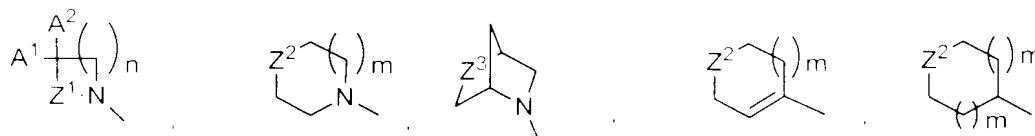
15 wherein  $R^1$  is an aryl group, optionally substituted, and  $R^3$  is  $C_1$ - $C_{10}$  alkyl, or a salt or hydrate thereof.

18. The (S)-intermediate of claim 17 wherein  $R^1$  is:



20

wherein  $Q^1$  is:  $R^{10}R^{11}N$ .



or  $Q^1$  and  $R^8$  taken together are dihydropyrrolidine, optionally substituted with  $R^{12}$ ;

$Z^1$  is  $CH_2(CH_2)_p$ ,  $CH(OH)(CH_2)_p$ , or  $C(O)$ ;

$Z^2$  is  $(O)_pS$ ,  $O$ , or  $N(R^{13})$ ;

5  $Z^3$  is  $(O)_pS$  or  $O$ ;

$A^1$  is  $H$  or  $CH_3$ ;

$A^2$  is selected from the group consisting of:

- a)  $H$ ,
- b)  $HO$ ,
- 10 c)  $CH_3$ ,
- d)  $CH_3O$ ,
- e)  $R^{14}OCH_2=C(O)NH$ ,
- f)  $R^{15}OC(O)NH$ ,
- g)  $(C_1-C_3)$ alkoxycarbonyl,
- 15 h)  $HOCH_2$ ,
- i)  $CH_3ONH$ ,
- j)  $CH_3C(O)$ ,
- k)  $CH_3C(O)CH_2$ ,
- l)  $CH_3C(OCH_2CH_2O)$ , and
- 20 m)  $CH_3C(OCH_2CH_2O)CH_2$ ,

or  $A^1-C-A^2$  taken together are  $CH_3-C(OCH_2CH_2O)$ ,  $C(O)$ , or  $C(=NR^{22})$ ;

$R^8$  is  $H$  or  $F$ , or is taken together with  $Q^1$  as above;

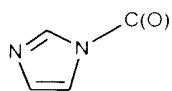
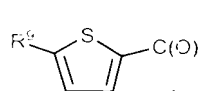
$R^9$  is  $H$  or  $F$ ;

25  $R^{10}$  and  $R^{11}$  are taken together with the  $N$  atom to form a 3,7-diazabicyclo[3.3.0]octane, pyrrole, pyrazole, imidazole, 1,2,3-triazole, 1,2,4-triazole, morpholine or a piperazine group, optionally substituted with  $R^{13}$ ;

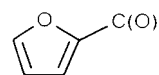
$R^{12}$  is selected from the group consisting of:

- a)  $CH_3C(O)$ ,

- b)  $\text{HC(O)}-$ ,  
c)  $\text{Cl}_2\text{CHC(O)}-$ ,  
d)  $\text{HOCH}_2\text{C(O)}-$ ,  
e)  $\text{CH}_3\text{SO}_2-$ ,  
5 f)  $\text{F}_2\text{CHC(O)}$  ,  
g)  $\text{H}_3\text{CC(O)OCH}_2\text{C(O)}-$ ,  
h)  $\text{HC(O)OCH}_2\text{C(O)}-$ ,  
i)  $\text{R}^{21}\text{C(O)OCH}_2\text{C(O)}-$ ,  
j)  $\text{H}_3\text{CCHCH}_2\text{OCH}_2\text{C(O)}-$ ,  
10 k) benzyl $\text{OCH}_2\text{C(O)}-$ ,  
l)-m)

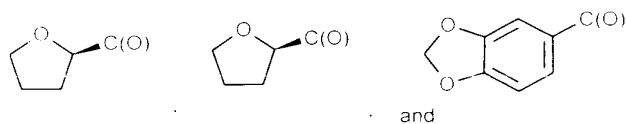


, and



- 15  $\text{R}^{13}$  is selected from the group consisting of:

- a)  $\text{R}^{14}\text{OC(R}^{16})(\text{R}^{17})\text{C(O)}-$ ,  
b)  $\text{R}^{15}\text{OC(O)}$  ,  
c)  $\text{R}^{18}\text{C(O)}-$ ,  
d)  $\text{H}_3\text{CC(O)(CH}_2)_2\text{C(O)}-$ ,  
20 e)  $\text{R}^{19}\text{SO}_2-$ ,  
f)  $\text{HOCH}_2\text{C(O)}$  ,  
g)  $\text{R}^{20}(\text{CH}_2)_2-$ ,  
h)  $\text{R}^{21}\text{C(O)OCH}_2\text{C(O)}$  ,  
i)  $(\text{CH}_3)_2\text{NCH}_2\text{C(O)NH}-$ ,  
25 j)  $\text{NCCH}_2$  ,  
k)  $\text{F}_2\text{CHCH}_2-$ ,  
l)-m)



$R^{14}$  is H,  $CH_3$ , benzyl, or  $CH_2C(O)-$ ;

5  $R^{15}$  is  $(C_1-C_3)$ alkyl, aryl, or benzyl;

$R^{16}$  and  $R^{17}$ , independently, are H or  $CH_3$ ;

$R^{18}$  is selected from the group consisting of:

- a)  $H-$ ,
- b)  $(C_1-C_4)$ alkyl,
- 10 c)  $aryl(CH_2)_m$ ,
- d)  $CH_2C-$ ,
- e)  $CH_2HC-$ ,
- f)  $FH_2C-$ ,
- g)  $F_2HC-$ , and
- 15 h)  $(C_3-C_6)$ cycloalkyl;

$R^{19}$  is selected from the group consisting of:

- a)  $CH_3$ ,
- b)  $CH_2Cl$ ,
- c)  $CH_2CH-CH_2$ ,
- 20 d) aryl, and
- e)  $CH_2CN$ ;

$R^{20}$  is OH,  $CH_3O-$ , or F;

$R^{21}$  is:

- a)  $CH_3-$ ,
- 25 b)  $HOCH_2-$ ,
- c) aniline, or
- d)  $(CH_3)_2N-CH_2-$ ,

$R^{22}$  is selected from the group consisting of:

- a) HO-  
b) CH<sub>2</sub>O-  
c) H<sub>2</sub>N-  
d) CH<sub>2</sub>OC(O)O- ,  
5 e) CH<sub>2</sub>C(O)OCH<sub>2</sub>C(O)O- ,  
f) aryl-CH<sub>2</sub>OCH<sub>2</sub>C(O)O- ,  
g) HO(CH<sub>2</sub>)<sub>2</sub>O- ,  
h) CH<sub>3</sub>OCH<sub>2</sub>O(CH<sub>2</sub>)<sub>2</sub>O- , and  
i) CH<sub>3</sub>OCH<sub>2</sub>O-;  
10 m is 0 or 1;  
n is 1-3;  
p is 0-2; and  
aryl is unsubstituted phenyl or phenyl unsubstituted with one of the following:  
a) F,  
15 b) Cl,  
c) OCH<sub>3</sub>,  
d) OH,  
e) NH<sub>2</sub>,  
f) (C<sub>1</sub>-C<sub>4</sub>)alkyl,  
20 g) OC(O)OCH<sub>3</sub>, or  
h) NO<sub>2</sub>;  
and protected forms thereof.

19. The (S)-intermediate of claim 18 wherein R<sup>1</sup> is selected from  
25 the group consisting of 3-fluoro-4-[4-(benzyloxycarbonyl)-1-piperazinyl]phenyl, 3-  
fluoro-4-(4-morpholinyl)phenyl, 4-(1,1-dioxohexahydro-1λ<sup>6</sup>-thiopyran-4-yl)-3-  
fluorophenyl, 3-fluoro-4-tetrahydro-2H-thiopyran-4-ylphenyl, 3,5-difluoro-4-(4-  
thiomorpholinyl)phenyl, 3-fluoro-4-(3-thietanyl)phenyl, and 4-(1,1-dioxido-3-  
thietanyl)-3-fluorophenyl.  
30

20. An (S)-intermediate of claim 17 where R<sup>3</sup> is is C<sub>4</sub>-C- tertiary alkyl.

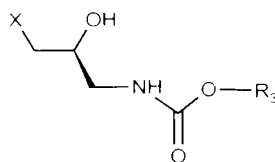
21. An (S)-intermediate of claim 20 where R<sup>3</sup> is tertiary butyl.

5

22. An (S)-intermediate of claim 17 having a name (S)-N-[[3-(3-Fluoro-4-morpholinylphenyl)-2-oxo-5-oxazolidinyl]methyl](tert-butoxy)carbamide.

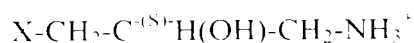
23. A method of preparing a secondary alcohol having a general structural formula:

10



wherein X is a halogen, alkylsulfonyl, or arylsulfonyl, and R<sup>3</sup> is C<sub>1</sub>-C<sub>10</sub> alkyl, or a salt or hydrate thereof.

15 comprising contacting an (S)-3-carbon amino alcohol having a general structural formula:



20 with a base and an carbonylating agent selected from the group consisting of a haloformate having a formula R<sup>3</sup>O-CO-X and a dialkyldicarbonate having a formula R<sup>3</sup>OCO<sub>2</sub>R<sup>3</sup>.

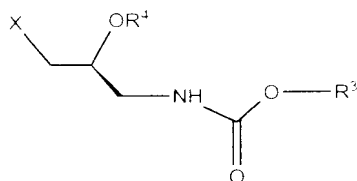
24. The method of claim 23 further comprising isolating the secondary alcohol in a crystalline form.

25



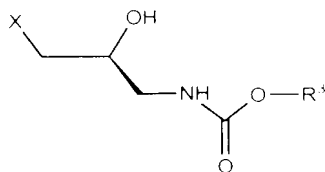
25. The method of claim 23 wherein the base is a tri(C<sub>1</sub>-C<sub>5</sub> alkyl)amine.

26. A method of preparing a (S)-secondary ester having a general  
5 structural formula:



wherein X is a halogen, alkylsulfonyl, or arylsulfonyl, R<sup>3</sup> is C<sub>1</sub>-C<sub>10</sub> alkyl, and R<sup>4</sup> is C<sub>1</sub>-C<sub>5</sub> alkylcarbonyl, or a salt or hydrate thereof,

10 comprising contacting an (S)-secondary alcohol having a general structural formula:



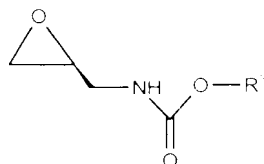
15 with a base and an acylating agent selected from the group consisting of an acid anhydride having a formula O(R<sup>4</sup>)<sub>2</sub>, and an activated acid having a formula R<sup>4</sup>X.

27. The method of claim 26 further comprising isolating the secondary alcohol in a crystalline form.

20

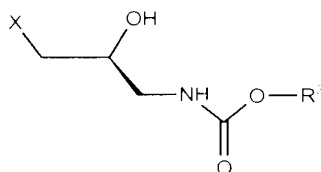
28. The method of claim 26 wherein the base is a tri(C<sub>1</sub>-C<sub>5</sub> alkyl)amine.

29. A method of preparing a (S)-epoxide having a general structural formula:



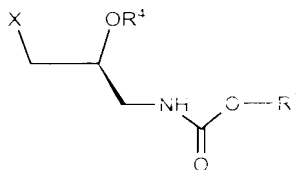
5 wherein R<sup>3</sup> is C<sub>1</sub>-C<sub>10</sub> alkyl, or a salt or hydrate thereof, comprising contacting

a) an (S)-secondary alcohol having a general structural formula:



10 wherein X is a halogen, alkylsulfonyl, or arylsulfonyl; or

b) an (S)-ester having a general structural formula:

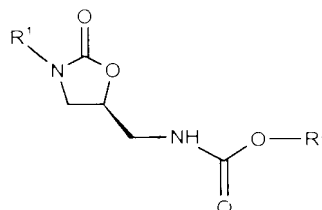


15 wherein R<sup>4</sup> is C<sub>1</sub>-C<sub>5</sub> alkylcarbonyl, with a lithium cation and a base whose conjugate acid has a pK<sub>a</sub> of greater than about 8.

30. The method of claim 29 further comprising isolating the secondary alcohol in a crystalline form.

20 31. The method of claim 29 wherein the base is a tertiary-butoxide

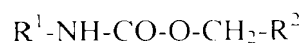
32. A method of preparing an (S)-oxazolidinone having a general structural formula:



5

wherein R<sup>3</sup> is C<sub>1</sub>-C<sub>10</sub> alkyl, and R<sup>1</sup> is optionally substituted aryl, or a salt or hydrate thereof, comprising contacting a carbamate having a general structural formula:

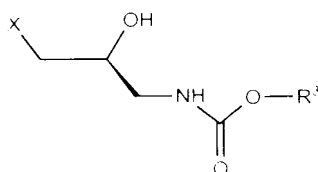
10



wherein R<sup>2</sup> is selected from the group consisting of C<sub>1</sub>-C<sub>20</sub> alkyl, C<sub>3</sub>-C<sub>7</sub> cycloalkyl, aryl optionally substituted with one or two C<sub>1</sub>-C<sub>3</sub> alkyl or halogen groups, allyl, 3-methylallyl, 3,3-dimethylallyl, vinyl, styrylmethyl, benzyl optionally substituted on the phenyl with one or two Cl, C<sub>1</sub>-C<sub>4</sub> alkyl, nitro, cyano, or trifluoromethyl groups, 9-fluorenylmethyl, trichloromethylmethyl, 2-trimethylsilylethyl, phenylethyl, 1-adamantyl, diphenylmethyl, 1,1-dimethylpropargyl, 2-furanylmethyl, isobornyl, and hydrogen, or a salt or hydrate thereof, with

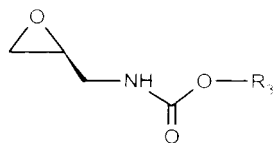
20

i) a secondary alcohol having a general structural formula:



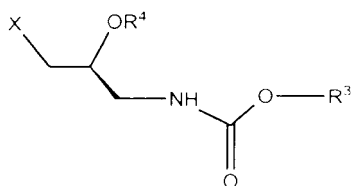
wherein X is halogen, alkylsulfonyl, or arylsulfonyl, or a salt or hydrate thereof;

ii) an (S)-epoxide having a general structural formula:



5

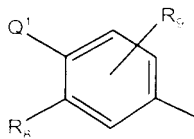
or iii) an (S)-ester having a general structural formula:



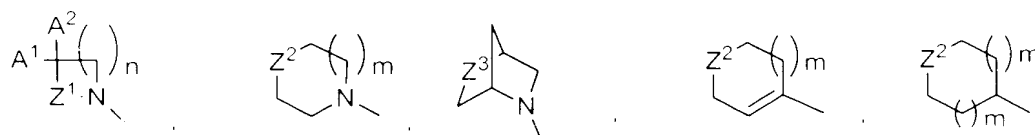
wherein R<sup>4</sup> is C<sub>1</sub>-C<sub>5</sub> alkylcarbonyl; in the presence of a lithium cation  
10 and a base whose conjugate acid has a pK<sub>a</sub> of greater than about 8.

33. The method of claim 32 further comprising isolating the (S)-oxazolidonone in a crystalline form.

15 34. The method of claim 32 wherein R<sup>1</sup> is:



wherein Q<sup>1</sup> is: R<sup>10</sup>R<sup>11</sup>N.



or  $Q^1$  and  $R^8$  taken together are dihydropyrrolidine, optionally substituted with  $R^{12}$ ;

$Z^1$  is  $CH_2(CH_2)_p$ ,  $CH(OH)(CH_2)_p$ , or  $C(O)$ ;

5  $Z^2$  is  $(O)_pS$ ,  $O$ , or  $N(R^{13})$ ;

$Z^3$  is  $(O)_pS$  or  $O$ ;

$A^1$  is  $H$  or  $CH_3$ ;

$A^2$  is selected from the group consisting of:

- a)  $H$ ,
- 10 b)  $HO$ ,
- c)  $CH_3$ ,
- d)  $CH_3O$ ,
- e)  $R^{14}OCH_2=C(O)NH$ ,
- f)  $R^{15}OC(O)NH$ ,
- 15 g)  $(C_1-C_3)$ alkoxycarbonyl,
- h)  $HOCH_2$ ,
- i)  $CH_3ONH$ ,
- j)  $CH_3C(O)$ ,
- k)  $CH_3C(O)CH_2$ ,
- 20 l)  $CH_3C(OCH_2CH_2O)$ , and
- m)  $CH_3C(OCH_2CH_2O)CH_2$ ,

or  $A^1-C-A^2$  taken together are  $CH_3-C(OCH_2CH_2O)$ ,  $C(O)$ , or  $C(=NR^{22})$ ;

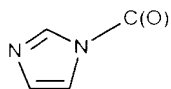
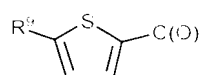
$R^8$  is  $H$  or  $F$ , or is taken together with  $Q^1$  as above;

$R^9$  is  $H$  or  $F$ ;

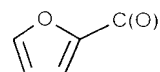
25  $R^{10}$  and  $R^{11}$  are taken together with the  $N$  atom to form a 3,7-diazabicyclo[3.3.0]octane, pyrrole, pyrazole, imidazole, 1,2,3-triazole, 1,2,4-triazole, morpholine or a piperazine group, optionally substituted with  $R^{13}$ ;

$R^{12}$  is selected from the group consisting of:

- a)  $\text{CH}_2\text{C}(\text{O})-$  ,  
 b)  $\text{HC}(\text{O})-$  ,  
 c)  $\text{CH}_2\text{CHC}(\text{O})-$  ,  
 d)  $\text{HOCH}_2\text{C}(\text{O})-$  ,  
 5 e)  $\text{CH}_2\text{SO}_2-$  ,  
 f)  $\text{F}_2\text{CHC}(\text{O})-$  ,  
 g)  $\text{H}_3\text{CC}(\text{O})\text{OCH}_2\text{C}(\text{O})-$  ,  
 h)  $\text{HC}(\text{O})\text{OCH}_2\text{C}(\text{O})-$  ,  
 i)  $\text{R}^{21}\text{C}(\text{O})\text{OCH}_2\text{C}(\text{O})-$  ,  
 10 j)  $\text{H}_3\text{CCHCH}_2\text{OCH}_2\text{C}(\text{O})-$  ,  
 k) benzyl $\text{OCH}_2\text{C}(\text{O})-$  ,  
 l)-m)

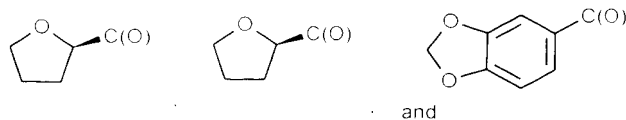


, and



15  $\text{R}^{13}$  is selected from the group consisting of:

- a)  $\text{R}^{14}\text{OC}(\text{R}^{16})(\text{R}^{17})\text{C}(\text{O})-$  ,  
 b)  $\text{R}^{15}\text{OC}(\text{O})-$  ,  
 c)  $\text{R}^{18}\text{C}(\text{O})-$  ,  
 d)  $\text{H}_3\text{CC}(\text{O})(\text{CH}_2)_2\text{C}(\text{O})-$  ,  
 20 e)  $\text{R}^{19}\text{SO}_2-$  ,  
 f)  $\text{HOCH}_2\text{C}(\text{O})-$  ,  
 g)  $\text{R}^{20}(\text{CH}_2)_2-$  ,  
 h)  $\text{R}^{21}\text{C}(\text{O})\text{OCH}_2\text{C}(\text{O})-$  ,  
 i)  $(\text{CH}_3)_2\text{NCH}_2\text{C}(\text{O})\text{NH}-$  ,  
 25 j)  $\text{NCCH}_2-$  ,  
 k)  $\text{F}_2\text{CHCH}_2-$  ,  
 l)-m)



$R^{14}$  is H,  $CH_3$ , benzyl, or  $CH_3C(O)-$ ;

$R^{15}$  is  $(C_1-C_3)$ alkyl, aryl, or benzyl;

$R^{16}$  and  $R^{17}$ , independently, are H or  $CH_3$ ;

5  $R^{18}$  is selected from the group consisting of:

- a) H-,
- b)  $(C_1-C_4)$ alkyl,
- c) aryl $(CH_2)_m$ ,
- d)  $ClH_2C-$ ,
- 10 e)  $Cl_2HC-$ ,
- f)  $FH_2C-$ ,
- g)  $F_2HC-$ , and
- h)  $(C_3-C_6)$ cycloalkyl;

$R^{19}$  is selected from the group consisting of:

- 15 a)  $CH_3$ ,
- b)  $CH_2Cl$ ,
- c)  $CH_2CH=CH_2$ ,
- d) aryl, and
- e)  $CH_2CN$ ;

20  $R^{20}$  is OH,  $CH_3O-$ , or F;

$R^{21}$  is:

- a)  $CH_3-$ ,
- b)  $HOCH_2-$ ,
- c) aniline, or
- 25 d)  $(CH_3)_2N-CH_2-$ ,

$R^{22}$  is selected from the group consisting of:

- a) HO-
- b)  $CH_3O-$

- c)  $\text{H}_2\text{N}-$   
d)  $\text{CH}_2\text{OC}(\text{O})\text{O}-$   
e)  $\text{CH}_3\text{C}(\text{O})\text{OCH}_2\text{C}(\text{O})\text{O}-$   
f) aryl- $\text{CH}_2\text{OCH}_2\text{C}(\text{O})\text{O}-$   
5 g)  $\text{HO}(\text{CH}_2)_2\text{O}-$   
h)  $\text{CH}_2\text{OCH}_2\text{O}(\text{CH}_2)_2\text{O}-$ , and  
i)  $\text{CH}_3\text{OCH}_2\text{O}-$ ;  
m is 0 or 1;  
n is 1-3;  
10 p is 0-2; and  
aryl is unsubstituted phenyl or phenyl unsubstituted with one of the following:  
a) F,  
b) Cl,  
c)  $\text{OCH}_3$ ,  
15 d) OH,  
e)  $\text{NH}_2$ ,  
f)  $(\text{C}_1-\text{C}_4)$ alkyl,  
g)  $\text{OC}(\text{O})\text{OCH}_3$ , or  
h)  $\text{NO}_2$ ;  
20 and protected forms thereof.

35. The method of claim 34 wherein  $\text{R}^1$  is selected from the group consisting of 3-fluoro-4-[4-(benzyloxycarbonyl)-1-piperazinyl]phenyl, 3-fluoro-4-(4-morpholinyl)phenyl, 4-(1,1-dioxohexahydro-1 $\lambda^6$ -thiopyran-4-yl)-3-fluorophenyl, 3-  
25 fluoro-4-tetrahydro-2H-thiopyran-4-ylphenyl, 3,5-difluoro-4-(4-thiomorpholinyl)phenyl, 3-fluoro-4-(3-thietanyl)phenyl, and 4-(1,1-dioxido-3-thietanyl)-3-fluorophenyl.

36. The method of claim 32 where  $\text{R}^3$  is  $\text{C}_4$ -C- tertiary alkyl.

30

37. The method of claim 36 where  $\text{R}^3$  is tertiary butyl.



38. The method of claim 32 where  $R^2$  is methyl.

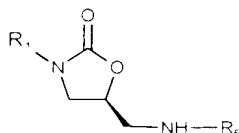
39. The method of claim 32 where X is Cl.

5

40. The method of claim 32 wherein the (S)-oxazolidinone is (S)-N-[[3-(3-fluoro-4-morpholinylphenyl)-2-oxo-5-oxazolidinyl]methyl]t-butoxycarbamide.

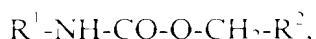
10

41. A method of preparing an (S)-oxazolidinone having a general structural formula:



15 wherein  $R^5$  is  $C_1$ - $C_6$  alkylcarbonyl,  $C_1$ - $C_6$  cycloalkylcarbonyl,  $C_1$ - $C_6$  alkylthiocarbonyl, or  $C_1$ - $C_6$  cycloalkylthiocarbonyl, and  $R^1$  is optionally substituted aryl, or a salt or hydrate thereof, comprising:

(a) contacting a carbamate having a general formula

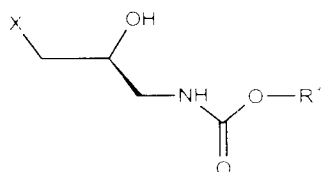


20

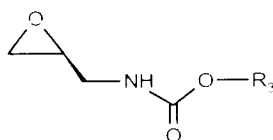
wherein  $R^2$  is selected from the group consisting of  $C_1$ - $C_{20}$  alkyl,  $C_3$ - $C_6$  cycloalkyl, aryl optionally substituted with one or two  $C_1$ - $C_3$  alkyl or halogen groups, allyl, 3-methylallyl, 3,3-dimethylallyl, vinyl, styrylmethyl, benzyl optionally substituted on the phenyl with one or two Cl,  $C_1$ - $C_4$  alkyl, nitro, cyano, or trifluoromethyl groups, 9-fluorenylmethyl, trichloromethylmethyl, 2-trimethylsilylethyl, phenylethyl, 1-adamantyl, diphenylmethyl, 1,1-dimethylpropargyl, 2-furanylmethyl, isobornyl, and hydrogen; with

25

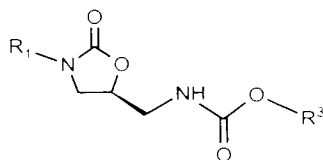
i) a secondary alcohol of a general structural formula:



5



10

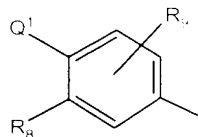


15

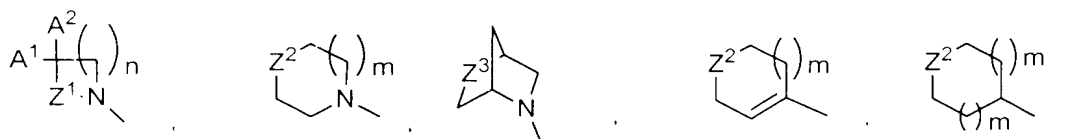
42. The method of claim 41 further comprising isolating the (S)-oxazolidonone in a crystalline form.

43. The method of claim 41 wherein  $R^1$  is:

5



wherein  $Q^1$  is:  $R^{10}R^{11}N$ ,



10

or  $Q^1$  and  $R^8$  taken together are dihydropyrrolidine, optionally substituted with  $R^{12}$ ;

$Z^1$  is  $CH_2(CH_2)_p$ ,  $CH(OH)(CH_2)_p$ , or  $C(O)$ ;

$Z^2$  is  $(O)_pS$ ,  $O$ , or  $N(R^{13})$ ;

$Z^3$  is  $(O)_pS$  or  $O$ ;

15

$A^1$  is  $H$  or  $CH_3$ ;

$A^2$  is selected from the group consisting of:

a)  $H$ ,

b)  $HO$ ,

c)  $CH_3$ ,

20

d)  $CH_3O$ ,

e)  $R^{14}OCH_2=C(O)NH$ ,

f)  $R^{15}OC(O)NH$ ,

g)  $(C_1-C_3)$ alkoxycarbonyl,

h)  $HOCH_2$ ,

25

i)  $CH_3ONH$ .

- j)  $\text{CH}_3\text{C}(\text{O})$ ,
- k)  $\text{CH}_3\text{C}(\text{O})\text{CH}_2$ ,
- l)  $\text{CH}_3\text{C}(\text{OCH}_2\text{CH}_2\text{O})$ , and
- m)  $\text{CH}_3\text{C}(\text{OCH}_2\text{CH}_2\text{O})\text{CH}_2$ ,

5 or  $\text{A}^1\text{-C-A}^2$  taken together are  $\text{CH}_3\text{-C}(\text{OCH}_2\text{CH}_2\text{O})$ ,  $\text{C}(\text{O})$ , or  $\text{C}(=\text{NR}^{22})$ ;

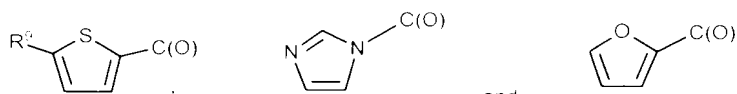
$\text{R}^8$  is H or F, or is taken together with  $\text{Q}^1$  as above;

$\text{R}^9$  is H or F;

$\text{R}^{10}$  and  $\text{R}^{11}$  are taken together with the N atom to form a 3,7-diazabicyclo[3.3.0]octane, pyrrole, pyrazole, imidazole, 1,2,3-triazole, 1,2,4-triazole,  
10 morpholine or a piperazine group, optionally substituted with  $\text{R}^{13}$ ;

$\text{R}^{12}$  is selected from the group consisting of:

- a)  $\text{CH}_3\text{C}(\text{O})-$ ,
- b)  $\text{HC}(\text{O})-$ ,
- c)  $\text{Cl}_2\text{CHC}(\text{O})-$ ,
- 15 d)  $\text{HOCH}_2\text{C}(\text{O})-$ ,
- e)  $\text{CH}_3\text{SO}_2-$ ,
- f)  $\text{F}_2\text{CHC}(\text{O})-$ ,
- g)  $\text{H}_3\text{CC}(\text{O})\text{OCH}_2\text{C}(\text{O})-$ ,
- h)  $\text{HC}(\text{O})\text{OCH}_2\text{C}(\text{O})$ ,
- 20 i)  $\text{R}^{21}\text{C}(\text{O})\text{OCH}_2\text{C}(\text{O})$ ,
- j)  $\text{H}_3\text{CCHCH}_2\text{OCH}_2\text{C}(\text{O})$ ,
- k) benzyl $\text{OCH}_2\text{C}(\text{O})$ ,
- l)-m)

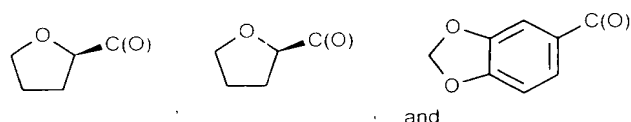


25

$\text{R}^{13}$  is selected from the group consisting of:

- a)  $\text{R}^{14}\text{OC}(\text{R}^{16})(\text{R}^{17})\text{C}(\text{O})$ ,

- b)  $R^{15}OC(O)-$ ,  
 c)  $R^{18}C(O)-$ ,  
 d)  $H_3CC(O)(CH_2)_2C(O)-$ ,  
 e)  $R^{19}SO_2-$ ,  
 5 f)  $HOCH_2C(O)-$ ,  
 g)  $R^{20}(CH_2)_2-$ ,  
 h)  $R^{21}C(O)OCH_2C(O)-$ ,  
 i)  $(CH_3)_2NCH_2C(O)NH-$ ,  
 j)  $NCCH_2-$ ,  
 10 k)  $F_2CHCH_2-$ ,  
 l)-m)



- $R^{14}$  is H,  $CH_3$ , benzyl, or  $CH_2C(O)-$ ;  
 15  $R^{15}$  is  $(C_1-C_3)$ alkyl, aryl, or benzyl;  
 $R^{16}$  and  $R^{17}$ , independently, are H or  $CH_3$ ;  
 $R^{18}$  is selected from the group consisting of:  
 a)  $H-$ ,  
 b)  $(C_1-C_4)$ alkyl,  
 20 c)  $aryl(CH_2)_m-$ ,  
 d)  $ClH_2C-$ ,  
 e)  $Cl_2HC-$ ,  
 f)  $FH_2C-$ ,  
 g)  $F_2HC-$ , and  
 25 h)  $(C_3-C_6)$ cycloalkyl;  
 $R^{19}$  is selected from the group consisting of:  
 a)  $CH_3$ ,  
 b)  $CH_2Cl$ ,

PATENT APPLICATION  
28341 6301A.US

c)  $\text{CH}_2\text{CH}=\text{CH}_2$ ,

d) aryl, and

e)  $\text{CH}_2\text{CN}$ ;

$\text{R}^{20}$  is OH,  $\text{CH}_3\text{O}-$ , or F;

5  $\text{R}^{21}$  is:

a)  $\text{CH}_3-$ ,

b)  $\text{HOCH}_2-$ ,

c) aniline, or

d)  $(\text{CH}_3)_2\text{N}-\text{CH}_2-$ ,

10  $\text{R}^{22}$  is selected from the group consisting of:

a) HO-

b)  $\text{CH}_3\text{O}-$

c)  $\text{H}_2\text{N}-$

d)  $\text{CH}_3\text{OC}(\text{O})\text{O}-$ ,

15 e)  $\text{CH}_3\text{C}(\text{O})\text{OCH}_2\text{C}(\text{O})\text{O}-$ ,

f) aryl- $\text{CH}_2\text{OCH}_2\text{C}(\text{O})\text{O}-$ ,

g)  $\text{HO}(\text{CH}_2)_2\text{O}-$ ,

h)  $\text{CH}_3\text{OCH}_2\text{O}(\text{CH}_2)_2\text{O}-$ , and

i)  $\text{CH}_3\text{OCH}_2\text{O}-$ ;

20 m is 0 or 1;

n is 1-3;

p is 0-2; and

aryl is unsubstituted phenyl or phenyl unsubstituted with one of the following:

a) F,

25 b) Cl,

c)  $\text{OCH}_3$ ,

d) OH,

e)  $\text{NH}_2$ ,

f)  $(\text{C}_1-\text{C}_4)$ alkyl,

30 g)  $\text{OC}(\text{O})\text{OCH}_3$ , or

h)  $\text{NO}_2$ ;

and protected forms thereof.

44. The method of claim 43 wherein  $R^1$  is selected from the group consisting of 3-fluoro-4-[4-(benzyloxycarbonyl)-1-piperazinyl]phenyl, 3-fluoro-4-(4-morpholinyl)phenyl, 4-(1,1-dioxohexahydro-1 $\lambda^6$ -thiopyran-4-yl)-3-fluorophenyl, 3-fluoro-4-tetrahydro-2H-thiopyran-4-ylphenyl, 3,5-difluoro-4-(4-thiomorpholinyl)phenyl, 3-fluoro-4-(3-thietanyl)phenyl, and 4-(1,1-dioxido-3-thietanyl)-3-fluorophenyl.

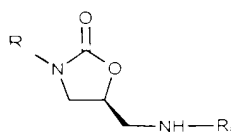
45. The method of claim 41 wherein  $R^3$  is  $C_4$ - $C_7$  tertiary alkyl.

46. The method of claim 45 wherein  $R^3$  is tertiary butyl.

47. The method of claim 41 wherein  $R^2$  is methyl.

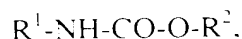
48. The method of claim 41 wherein X is Cl.

49. A method of preparing an (S)-oxazolidinone having a general structural formula:



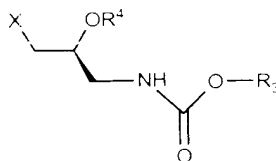
wherein  $R^1$  is optionally substituted aryl, and  $R^5$  is  $C_1$ - $C_6$  alkylcarbonyl,  $C_1$ - $C_6$  cycloalkylcarbonyl,  $C_1$ - $C_6$  alkylthiocarbonyl, or  $C_1$ - $C_6$  cycloalkylthiocarbonyl; or a salt or hydrate thereof, comprising:

(a) contacting a carbamate having general structural formula:



wherein  $R^2$  is selected from the group consisting of  $C_1$ - $C_{20}$  alkyl,  $C_3$ - $C$ -cycloalkyl, aryl optionally substituted with one or two  $C_1$ - $C_3$  alkyl or halogen groups, allyl, 3-methylallyl, 3,3-dimethylallyl, vinyl, styrylmethyl, benzyl optionally substituted on the phenyl with one or two Cl,  $C_1$ - $C_4$  alkyl, nitro, cyano, or  
5 trifluoromethyl groups, 9-fluorenylmethyl, trichloromethylmethyl, 2-trimethylsilylethyl, phenylethyl, 1-adamantyl, diphenylmethyl, 1,1-dimethylpropargyl, 2-furanylmethyl, isobornyl, and hydrogen;

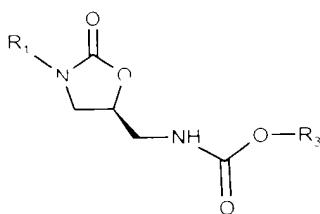
with a (S)-protected alcohol/ester having a general structural formula:



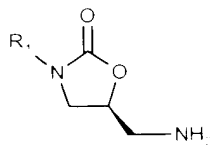
10

wherein X is a halogen, alkylsulfonyl, or arylsulfonyl;  $R^3$  is  $C_1$ - $C_{10}$  alkyl; and  $R^4$  is hydrogen or  $C_1$ - $C_5$  alkylcarbonyl;

in the presence of a lithium cation and a base whose conjugate acid has a pKa of greater than about 8, to provide an (S)-protected oxazolidinone having a  
15 general structural formula:



(b) contacting the reaction product of step (a) with an aqueous acid to produce an (S)-oxazolidinone free amine having a general structural formula:



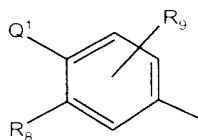
20



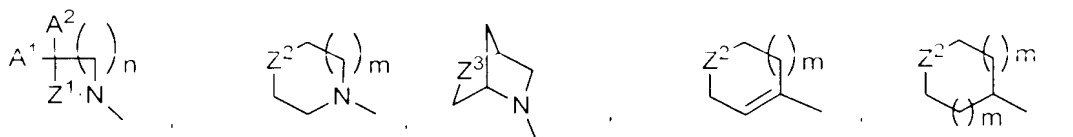
and (c) contacting the reaction product of step (b) with a base and an acylating or thioacylating agent selected from the group consisting of (i) an acid anhydride of the structural formula  $O(R^5)_2$ , (ii) an activated acid of the structural formula  $R^5X$ , or (iii) a dithioester of the structural formula  $R^5S(C=S)R^5$ , wherein  $R^5$  is  $C_1$ - $C_6$  alkylcarbonyl,  $C_1$ - $C_6$  cycloalkylcarbonyl,  $C_1$ - $C_6$  alkylthiocarbonyl, or  $C_1$ - $C_6$  cycloalkylthiocarbonyl, and X is halogen, alkylsulfonyl, or arylsulfonyl.

50. The method of claim 49 further comprising isolating the (S)-oxazolidonone in a crystalline form.

51. The method of claim 49 wherein  $R^1$  is:



wherein  $Q^1$  is:  $R^{10}R^{11}N$ ,



or  $Q^1$  and  $R^8$  taken together are dihydropyrrolidine, optionally substituted with  $R^{12}$ ;

$Z^1$  is  $CH_2(CH_2)_p$ ,  $CH(OH)(CH_2)_p$ , or  $C(O)$ ;

$Z^2$  is  $(O)_pS$ ,  $O$ , or  $N(R^{13})$ ;

$Z^3$  is  $(O)_pS$  or  $O$ ;

$A^1$  is  $H$  or  $CH_3$ ;

$A^2$  is selected from the group consisting of:

a)  $H$ .

- b) HO,  
c) CH<sub>3</sub>,  
d) CH<sub>3</sub>O,  
e) R<sup>14</sup>OCH<sub>2</sub>=C(O)NH,  
5 f) R<sup>15</sup>OC(O)NH,  
g) (C<sub>1</sub>-C<sub>3</sub>)alkoxycarbonyl,  
h) HOCH<sub>2</sub>,  
i) CH<sub>3</sub>ONH,  
j) CH<sub>3</sub>C(O),  
10 k) CH<sub>3</sub>C(O)CH<sub>2</sub>,  
l) CH<sub>3</sub>C(OCH<sub>2</sub>CH<sub>2</sub>O), and  
m) CH<sub>3</sub>C(OCH<sub>2</sub>CH<sub>2</sub>O)CH<sub>2</sub>,

or A<sup>1</sup>-C-A<sup>2</sup> taken together are CH<sub>3</sub>-C(OCH<sub>2</sub>CH<sub>2</sub>O), C(O), or C(=NR<sup>22</sup>);

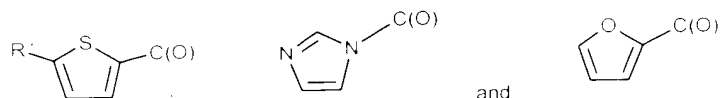
R<sup>8</sup> is H or F, or is taken together with Q<sup>1</sup> as above;

15 R<sup>9</sup> is H or F;

R<sup>10</sup> and R<sup>11</sup> are taken together with the N atom to form a 3,7-diazabicyclo[3.3.0]octane, pyrrole, pyrazole, imidazole, 1,2,3-triazole, 1,2,4-triazole, morpholine or a piperazine group, optionally substituted with R<sup>13</sup>;

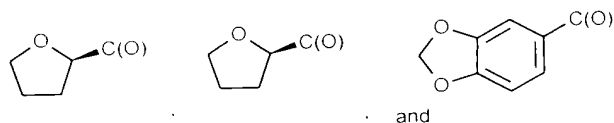
R<sup>12</sup> is selected from the group consisting of:

- 20 a) CH<sub>3</sub>C(O) ,  
b) HC(O) ,  
c) Cl<sub>2</sub>CHC(O)- ,  
d) HOCH<sub>2</sub>C(O)- ,  
e) CH<sub>3</sub>SO<sub>2</sub>- ,  
25 f) F<sub>2</sub>CHC(O) ,  
g) H<sub>3</sub>CC(O)OCH<sub>2</sub>C(O)- ,  
h) HC(O)OCH<sub>2</sub>C(O) ,  
i) R<sup>21</sup>C(O)OCH<sub>2</sub>C(O)- ,  
j) H<sub>3</sub>CCHCH<sub>2</sub>OCH<sub>2</sub>C(O) ,  
30 k) benzylOCH<sub>2</sub>C(O) ,  
l)-m)



$R^{13}$  is selected from the group consisting of:

- a)  $R^{14}OC(R^{16})(R^{17})C(O)-$ ,
- b)  $R^{15}OC(O)-$ ,
- 5 c)  $R^{18}C(O)-$ ,
- d)  $H_3CC(O)(CH_2)_2C(O)-$ ,
- e)  $R^{19}SO_2-$ ,
- f)  $HOCH_2C(O)-$ ,
- g)  $R^{20}(CH_2)_2-$ ,
- 10 h)  $R^{21}C(O)OCH_2C(O)-$ ,
- i)  $(CH_3)_2NCH_2C(O)NH-$ ,
- j)  $NCCH_2-$ ,
- k)  $F_2CHCH_2-$ ,
- l)-m)



15

$R^{14}$  is H,  $CH_3$ , benzyl, or  $CH_3C(O)-$ ;

$R^{15}$  is  $(C_1-C_3)$ alkyl, aryl, or benzyl;

$R^{16}$  and  $R^{17}$ , independently, are H or  $CH_3$ ;

20  $R^{18}$  is selected from the group consisting of:

- a)  $H-$ ,
- b)  $(C_1-C_4)$ alkyl,
- c)  $aryl(CH_2)_m-$ ,
- d)  $ClH_2C-$ ,
- 25 e)  $Cl_2HC-$ ,

PATENT APPLICATION  
28341 6301A.US

- f)  $\text{FH}_2\text{C}-$ ,
- g)  $\text{F}_2\text{HC}-$ , and
- h)  $(\text{C}_3-\text{C}_6)\text{cycloalkyl}$ ;

$\text{R}^{19}$  is selected from the group consisting of:

- 5 a)  $\text{CH}_3-$ ,
- b)  $\text{CH}_2\text{Cl}-$ ,
- c)  $\text{CH}_2\text{CH}=\text{CH}_2-$ ,
- d) aryl, and
- e)  $\text{CH}_2\text{CN}-$ ;

10  $\text{R}^{20}$  is  $\text{OH}$ ,  $\text{CH}_3\text{O}-$ , or  $\text{F}$ ;

$\text{R}^{21}$  is:

- a)  $\text{CH}_3-$ ,
- b)  $\text{HOCH}_2-$ ,
- c) aniline, or
- 15 d)  $(\text{CH}_3)_2\text{N}-\text{CH}_2-$ ,

$\text{R}^{22}$  is selected from the group consisting of:

- a)  $\text{HO}-$
- b)  $\text{CH}_3\text{O}-$
- c)  $\text{H}_2\text{N}-$
- 20 d)  $\text{CH}_3\text{OC}(\text{O})\text{O}-$ ,
- e)  $\text{CH}_3\text{C}(\text{O})\text{OCH}_2\text{C}(\text{O})\text{O}-$ ,
- f) aryl- $\text{CH}_2\text{OCH}_2\text{C}(\text{O})\text{O}-$ ,
- g)  $\text{HO}(\text{CH}_2)_2\text{O}-$ ,
- h)  $\text{CH}_3\text{OCH}_2\text{O}(\text{CH}_2)_2\text{O}-$ , and
- 25 i)  $\text{CH}_3\text{OCH}_2\text{O}-$ ;

m is 0 or 1;

n is 1-3;

p is 0-2; and

aryl is unsubstituted phenyl or phenyl substituted with one of the following:

- 30 a)  $\text{F}$ ,
- b)  $\text{Cl}$ ,

- 5 c)  $\text{OCH}_3$ ,  
d)  $\text{OH}$ ,  
e)  $\text{NH}_2$ ,  
f)  $(\text{C}_1\text{-C}_4)\text{alkyl}$ ,  
g)  $\text{OC}(\text{O})\text{OCH}_3$ , or  
h)  $\text{NO}_2$ ;  
and protected forms thereof.

10 52. The method of claim 51 wherein  $\text{R}^1$  is selected from the group consisting of 3-fluoro-4-[4-(benzyloxycarbonyl)-1-piperazinyl]phenyl, 3-fluoro-4-(4-morpholinyl)phenyl, 4-(1,1-dioxohexahydro-1 $\lambda^6$ -thiopyran-4-yl)-3-fluorophenyl, 3-fluoro-4-tetrahydro-2H-thiopyran-4-ylphenyl, 3,5-difluoro-4-(4-thiomorpholinyl)phenyl, 3-fluoro-4-(3-thietanyl)phenyl, and 4-(1,1-dioxido-3-thietanyl)-3-fluorophenyl.

15

53. The method of claim 49 wherein  $\text{R}^3$  is  $\text{C}_4\text{-C}_7$  tertiary alkyl.

54. The method of claim 53 wherein  $\text{R}^3$  is tertiary butyl.

20

55. The method of claim 49 wherein  $\text{R}^2$  is methyl.

56. The method of claim 49 wherein X is Cl.